REMARKS

Reconsideration of this application is requested. Claims 1-17 and 33-36 are active in the application subsequent to entry of this amendment.

Claims 18-32 have been withdrawn in order to reduce issues thereby removing the rejection stated in item 4 of the Official Action. Claims 1 and 33 are amended to replace "usually" with the more common term "about" and resolve the claim clarity issue raised by the examiner in item 2 of the Official Action. In addition, the Abstract has been rewritten as a single paragraph.

Submitted with this response is an evidentiary declaration of the senior inventor, Mr. Hayashi, made June 16, 2003. The Declaration and the evidence presented in it is discussed in more detail in the comments that follow.

Applicants claims are directed to a magnetic recording medium composed of a non-magnetic base film; a non-magnetic undercoat layer formed on the non-magnetic base film, comprising a binder resin and non-magnetic acicular black iron-based composite particles; and a magnetic coating film formed on the now-magnetic undercoat layer, comprising a binder resin and magnetic particles. The non-magnetic acicular black iron-based composite particles have an average major axis diameter of about 0.011 to 0.35 μm. and comprise acicular hematite particles or acicular iron oxide hydroxide particles; a coating layer formed on the surface of the acicular hematite particle or acicular iron oxide hydroxide particle, of at least one organosilicon compound as specified in claim 1, and finally formed on at least a part of the organosilicon compound coating layer, a single carbon black coat in an amount of 21 to 50 parts by weight based on 100 parts by weight of the acicular hematite particles or acicular iron oxide hydroxide particles.

Applicants also describe and claim a non-magnetic substrate composed of a non-magnetic base film; and a non-magnetic undercoat layer formed on the non-magnetic base film, comprising a binder resin and the above-mentioned non-magnetic acicular

black iron-based composite particles.

By using non-magnetic acicular black iron-based composite particles as non-magnetic particles, the inventive magnetic recording medium exhibits a smooth surface, a lower light transmittance, a lower surface resistivity value, a low friction coefficient and an excellent running property. Also, the non-magnetic substrate exhibits a smooth surface and a lower surface resistively value.

All of the originally-filed claims stand rejected as being unpatentable over the combination of Hayashi in view of EP 0913431 as stated in more detail in item 7 of the Official Action. Applicants traverse this rejection as the evidence of record provides no motivation to combine the teachings of the two documents and in any event the magnetic recording media and non-magnetic substrates of the present invention have properties distinct from and patentable over the disclosures of either of the two documents or their combination.

EP 0913431 to Hayashi et al assigned to the owners of the subject application discloses black iron-based composite particles comprising as a core particle black iron oxide particle or black iron oxide hydroxide particle having an average particle size of 0.08 to 1.0 μm; a coating layer formed on the surface of the black iron oxide particle or black iron oxide hydroxide particle of at least one organosilicon compound selected from (1) organosilane compounds obtained by drying or heat-treating alkoxysilane compounds, (2) polysiloxanes, or modified polysiloxanes and (3) fluoroalkyl organosilane compounds obtained by drying or heat-treating fluoroalkylsilane compounds. Finally, carbon black fine particles having an average particle size of 0.005 to 0.05 μm, are adhered (attached) onto the coating layer. The amount of the carbon black fine particles adhered is 1 to 30 parts by weight based on 100 parts by weight of the black iron oxide particles or black iron oxide hydroxide particles.

EP 0913431 also discloses a paint and a rubber or resin composition containing black iron-based composite particles. There is neither disclosure nor suggestion in EP 0913431 that the non-magnetic acicular black iron-based composite particles are

suitable for use as non-magnetic particles for a non-magnetic undercoat layer of a magnetic recording medium. Further, there is no motivation in EP 0913431 for using the non-magnetic acicular black iron-based composite particles as non-magnetic particles for a non-magnetic undercoat layer of a magnetic recording medium.

US Patent No. 5,750,250 also to Hayashi et al (and assigned to the owners of the present application) discloses a magnetic recording medium composed of a non-magnetic substrate, a non-magnetic undercoat layer comprising a binder resin, and hematite particles for a non-magnetic undercoat layer for a magnetic recording medium, comprising high-density acicular hematite particles having an average major axial diameter of not more than 0.3 μm, a major axial diameter distribution in geometrical standard of not more than 1.50 and a BET specific surface area of not less than $35m^2/g$, showing a pH of not less than 8, and containing not more than 300 ppm of soluble sodium salt (calculated as Na) and not more than 150 ppm of soluble sulfate (calculated as SO_4), which is formed on the said non-magnetic substrate. The magnetic recording layer contains magnetic iron-based alloy particles and a binder resin, and is formed on the said non-magnetic undercoat layer.

Hayashi et al's non-magnetic undercoat layer of the magnetic recording medium exhibits excellent strength and surface properties, and the magnetic recording medium exhibits a low light transmittance, excellent surface smoothness and uniform thickness.

This reference neither discloses nor suggests a low surface resistivity value or a low friction coefficient of the magnetic recording medium.

Hayashi '250 provides neither disclosure nor suggestion of the idea of improving the surface resistivity value and the friction coefficient of the magnetic recording medium. So, in Hayashi et al there is no motivation to use the black iron-based composite particles of EP 0913431 instead of the hematite particles of Hayashi '250 for improving the surface resistivity value and the friction coefficient of the magnetic recording medium. Therefore, there is no motivation to combine Hayashi et al '250 and EP 0913431 nor suggestion of the present invention from Hayashi et al and EP0913431.

Accordingly, the Examiner's rejection under 35 USC 103(a) based on Hayashi et al in view of EP 0913431, is based upon conjecture and hindsight.

In addition, to the lack of motivation to combine the two references applicants have conducted comparative studies as between Hayashi '250 and the magnetic recording medium and non-magnetic substrate of the present application. In the attached Declaration of Mr. Hayashi evidence is provided showing the magnetic recording medium of Hayashi '250 has a surface resistivity value of 2.9×10^{11} Ω/cm^2 and a friction coefficient of 0.35, both of which are out of the range of the present invention. So, the magnetic recording medium of the present invention is superior in surface resistivity and friction coefficient to that of Hayashi '250.

Accordingly, one of ordinary skill in the art can not foresee the magnetic recording medium and non-magnetic substrate of the present invention from a combination of Hayashi '250 and EP 0913431.

For the above reasons it is respectfully submitted that the claims of this application define inventive subject matter. Reconsideration and allowance are solicited.

Respectfully submitted,

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IN THE ABSTRACT

Please amend the Abstract as follows:

ABSTRACT OF THE DISCLOSURE:

A magnetic recording medium ~~of the present invention comprises:~~ composed of a non-magnetic base film; a non-magnetic undercoat layer formed on the non-magnetic base film, ~~comprising~~ including a binder resin and non-magnetic acicular black iron-based composite particles; and a magnetic coating film comprising a binder resin and magnetic particles~~;~~. ~~the~~ The non-magnetic acicular black iron-based composite particles having an average major axis diameter of ~~usually~~ about 0.011 to 0.35 μm, ~~comprising:~~ and are composed of acicular hematite particles or acicular iron oxide hydroxide particles (as core particles) having an average major axis diameter of 0.01 to 0.3 μm; a coating layer formed on the surface of ~~said acicular hematite particle or acicular iron oxide hydroxide particle, comprising~~ the core particles of a specific organosilicon compound; and a single carbon black coat formed on the coating layer in an amount of 21 to 50 parts by weight based on 100 parts by weight of the core particles.